DOCUMENT RESUME

ED 410 433 CE 074 609

AUTHOR Lewis, Morgan V.
TITLE Characteristics of Successful School-to-Work Initiatives: What the Research Says. Information Series No. 370.
INSTITUTION ERIC Clearinghouse on Adult, Career, and Vocational Education, Columbus, OH.
SPONS AGENCY Office of Educational Research and Improvement (ED), Washington, DC.
PUB DATE 1997-00-00
NOTE 45p.
CONTRACT RR93002001
AVAILABLE FROM Publications, Center on Education and Training for Employment, 1900 Kenny Road, Columbus, OH 43210-1090 (order no. IN370: $7).
PUB TYPE ERIC Publications (071)
EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Career Education; *Education Work Relationship; Educational Change; High Schools; *Partnerships in Education; Postsecondary Education; *Program Effectiveness; *School Business Relationship; Vocational Education; Work Experience Programs
IDENTIFIERS *School to Work Opportunities Act 1994

ABSTRACT

The simplicity and "common-sense" quality of school-to-work's (STW) basic concepts are the greatest threats to the full implementation of STW. Implementation requires a fundamental restructuring of secondary education and far greater involvement of employers in the preparation of young people for work. A synthesis of findings from eight documents that examined empirical evidence on the conduct and outcomes of efforts to facilitate STW transition identified the following characteristics of successful STW initiatives: (1) a comprehensive, strategic vision that sets forth the linkages expected at each level of the system and encourages partners to realize the vision in their particular circumstances; (2) special efforts to involve employers in their partnerships; (3) commitment and support at all levels and from all partners; (4) adequate financial support from a variety of sources; (5) students who have a strong foundation of career information and an awareness of their own interests, goals, and abilities that result from a planned sequence of learning experiences; and (6) integration of academic learning and occupational learning. Major efforts will be needed in these areas: recruiting enough employers who are willing to provide opportunities for work-based learning; providing teachers the time, resources, and support required to connect school-based and work-based learning; informing parents about the objectives of STW and countering erroneous perceptions and assumptions; and fostering the vocational maturity of high school students. Contains 34 references. (SK)

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What the Research Says

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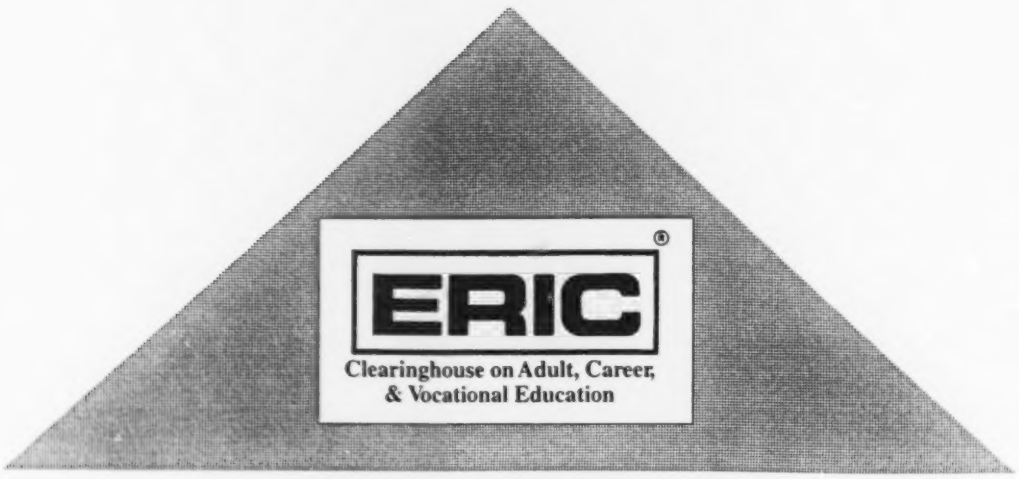
Morgan V. Lewis



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Characteristics of Successful School-to-Work Initiatives

What the Research Says

Information Series No. 370

Morgan V. Lewis

ERIC Clearinghouse on Adult, Career, and Vocational Education
Center on Education and Training for Employment
College of Education
The Ohio State University
1900 Kenny Road
Columbus, Ohio 43210-1090

1997

Funding Information

Project Title:	ERIC Clearinghouse on Adult, Career, and Vocational Education
Contract Number:	RR93002001
Act under Which Administered:	41 USC 252 (15) and P.L. 92-318
Source of Contract:	Office of Educational Research and Improvement U.S. Department of Education Washington, DC 20208
Contractor:	Center on Education and Training for Employment The Ohio State University Columbus, Ohio 43210-1090
Executive Director:	Darrell L. Parks
Disclaimer:	This publication was prepared pursuant to a contract with the Office of Educational Research and Improvement, U.S. Department of Education. Contractors undertaking such projects under government sponsorship are encouraged to express freely their judgment in professional and technical matters. Points of view or opinions do not, therefore, necessarily represent official U.S. Department of Education position or policy.
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Foreword

The Educational Resources Information Center Clearinghouse on Adult, Career, and Vocational Education (ERIC/ACVE) is 1 of 16 clearinghouses in a national information system that is funded by the Office of Educational Research and Improvement (OERI), U.S. Department of Education. This paper was developed to fulfill one of the functions of the clearinghouse—interpreting the literature in the ERIC database. This paper should be of interest to teachers, administrators, and counselors involved in implementing school-to-work programs.

Until his retirement, Morgan V. Lewis was Research Scientist at the Center on Education and Training for Employment (CETE), where he conducted projects related to planning, evaluation, and policy analysis. Among his research projects were evaluations of the national standards established by the National Institute for Automotive Service Excellence; the performance of schools and colleges accredited by the Accrediting Commission of Career Schools and Colleges of Technology; and the cost-effectiveness of school-supervised work experience programs. He continues to serve CETE as Team Leader for technical assistance in a World Bank training project in Kyrgyzstan.

The following people are acknowledged for their critical review of the manuscript prior to publication: Kenneth Gray, Professor of Education, Pennsylvania State University; Richard Kazis, Vice President, Policy and Research, Jobs for the Future; Deborah Bingham-Catri, Director, Vocational Instructional Materials Laboratory, and Sandra Pritz, Research Specialist, Center on Education and Training for Employment. Susan Imel coordinated publication development, Sandra Kerka edited the manuscript, and Janet Ray served as word processor operator.

Darrell L. Parks
Executive Director
Center on Education and
Training for Employment

Executive Summary

The enactment of the School-to-Work Opportunities Act (STWOA) has led to the creation of local partnerships that have involved a wide range of stakeholders in efforts to improve student learning and preparation for employment by connecting school-based with work-based learning. Although these initiatives have received wide attention and support, they face a major paradox:

> *The simplicity and "common-sense" quality of School-to-Work's (STW) basic concepts are the greatest threats to the full implementation of these concepts.*

Those who do not have an appreciation of the implications of these concepts often assume that STW should be easy to implement. The reality is that implementation will require a fundamental restructuring of secondary education and far greater involvement of employers in the preparation of young people for work than has ever previously been achieved.

This paper was prepared to assist those who are attempting to make these fundamental changes. The paper synthesizes the findings from eight documents that examined empirical evidence on the conduct and outcomes of efforts to facilitate the transition from school to work. This synthesis identified the following six characteristics of successful STW initiatives:

1. Successful initiatives are guided by a comprehensive, strategic vision that sets forth the linkages expected at each level of the system and encourages partners to realize the vision in their particular circumstances.

2. Successful initiatives have made special efforts to involve employers in their partnerships.

3. Commitment and support at all levels and from all partners are essential for STW initiatives. It is helpful to have individuals or groups who act as advocates for STW.

4. Successful initiatives have adequate financial support, which often means a variety of different sources have been developed.

5. Students have a strong foundation of career information and an awareness of their own interests, goals, and abilities that result from a planned sequence of learning experiences throughout their school years.

6. Academic learning is integrated with and supportive of occupational learning.

If the STWOA is to be implemented fully, major efforts will be needed in these areas:

- Recruiting enough employers who are willing to provide opportunities for work-based learning

- Providing teachers the time, resources, and support (especially the assistance of employers) required to connect school-based and work-based learning

- Informing parents about the objectives of STW and countering erroneous perceptions and assumptions.

- Fostering the vocational maturity of high school students

If STW systems are provided adequate resources and time to develop, they can make a major contribution to improving the education of young people and the productivity of the U.S. work force.

Information on STW may be found in the ERIC database using the following descriptors: Career Education, *Education Work Relationship, Educational Change, High Schools, *Partnerships in Education, Postsecondary Education, *Program Effectiveness, *School Business Relationship, Vocational Education, Work Experience Programs. Asterisks indicate descriptors that are particularly relevant.

Introduction

Rarely has an educational initiative generated the attention and support that followed the passage of the School-to-Work Opportunities Act (PL 103-239) in May 1994. The act authorized federal grants to states that submitted detailed plans to develop better systems for assisting young people in making the transition from education to employment. Many governors took a personal interest in these plans and are providing personal leadership for their implementation. A critical component of the plans is the requirement for local partnerships made up of educators, employers, labor leaders, and other community representatives. These partnerships have widened the number of stakeholders concerned with improving the way young people are prepared for their future careers.

Despite the wide attention and support that School-to-Work (STW) has received, it faces a major paradox:

> *The simplicity and "common-sense" quality of the basic STW concepts are the greatest threats to the full implementation of these concepts*

Those who do not have an appreciation of the implications of these concepts tend to assume that they should be easy to implement. The reality is that implementation will require a fundamental restructuring of secondary education and the full involvement of employers in the preparation of young people for work.

Halperin (1994) has delineated the ways that the School-to-Work Opportunities Act (STWOA) is different from all other federal education legislation. He has also depicted how secondary education would change if the vision underlying this legislation were to achieve its potential. If STW is to be implemented fully, most instruction during the final 2 years of secondary education must be revised to be integrated with activities and instruction that occur in the workplace. To prepare young people to make informed choices of the occupations they wish to study in these final 2 years, the information they receive about occupations and their opportunities for exploration must be substantially increased throughout the lower grades, with a special emphasis on the middle school years.

In addition, employers must be willing to become involved to a depth and on a scale far exceeding any previous efforts at education-employment partnership. Employers must be willing to work with educators to plan cooperative activities and to provide opportunities for exploration and work-based learning for all students who desire these experiences. These activities represent enormous challenges to educators and their partners. If these challenges are successfully met, STW will accomplish the far-reaching systemic changes called for in its authorizing legislation. This paper was prepared in the hope that it would provide assistance in meeting these challenges.

Four parts of this paper follow this introduction. Part I develops an historical and cultural context for the current STW initiatives. Part II contains a brief summary of the documents upon which the paper is based. These documents identify guidelines, principles, and practices (collectively referred to as *characteristics*) that have been found to be associated with successful STW initiatives. Part III, the main body of the paper, presents each of the characteristics and quotes the sources that constitute the basis for the characteristics. Part IV, the final section, offers some preliminary observations about the major barriers to the full implementation of STW. Those readers who are primarily interested in assistance for implementation may want to go directly to Part III.

It should be noted that the characteristics are based primarily on studies of *programs* that were in operation prior to the passage of STWOA. The characteristics thus represent a synthesis of findings regarding successful transition from education to employment. The development of *systems* to facilitate the widespread adoption of STW should, of course, be based on the best available research evidence. This evidence suggests, however, that the establishment of STW systems will require efforts beyond those reflected in these characteristics. The purpose of the act is not the creation of more programs. The intent of the legislation will be fulfilled only if the STW systems that are developed are part of comprehensive educational reform serving *all* students[1].

[1] Although it not used as a source for the characteristics presented in this paper, Kyle (1995) does examine STW as part of comprehensive school reform in Kentucky.

Historical and Cultural Context

STW is not the first attempt to make secondary education more relevant to the interests of students and more useful in their future occupational roles. Such efforts date from the manual training movement of the 1870s, which recommended that instruction in wood and metal working skills be made part of the high school curriculum. The proponents of manual training (e.g., Runkle 1878)[1] argued that studying topics of inherent interest would produce more motivated students. The most prominent advocate of manual training, Calvin Woodward, continually stressed that its purpose was not to train students for occupations:

> I advocate manual training for all children as an element in general education. I care little what tools are used, so long as proper habits (morals) are formed, and provided the windows of the mind are kept open toward the world of *things* and *forces*, physical as well as spiritual.
>
> When the manual elements which are essential to a liberal education are universally accepted and incorporated into American schools, the word "manual" may very properly be dropped. (Woodward 1883, pp. 60-61)

The proponents of vocational education, in contrast, emphasized the need to give students direct preparation for their future occupations. The Commission on National Aid to Vocational Education (1914) expressed the hope that vocational training would "indirectly but positively affect the aims and methods of general education" (p. 117). The primary purposes of vocational education, however, were economic:

> To conserve and develop our [natural] resources, to promote a more productive and prosperous agriculture; to prevent the waste of human labor; to

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[1] The years of publication for Runkel, Woodward, and the National Commission on Aid to Vocational Education are from the original documents. The page citations are from Lazerson and Grubb (1974).

> supplement apprenticeship; to increase the wage-earning power of our productive workers; to meet the increasing demand for trained workmen; [and] to offset the increased cost of living. (pp. 116-117)

Stephens (1995) has compared the similarities between the Smith-Hughes Act of 1917, which first authorized federal aid to vocational education, and the STWOA. Both acts were written to address problems in education and the economy, and the rationales for their passage are almost identical.

Manual arts and vocational education had impacts that have lasted until the present, but neither achieved the major curricular changes hoped for by their advocates. In the 1970s, a full century after manual training began, career education was promoted as a way to forge linkages between what happens in the schools and what happens in the workplace. Through most of the 1970s, career education was the second highest federal educational priority, second only to increasing access for underserved populations. Sydney Marland, the primary spokesperson for career education, was appointed to the highest federal administrative position in education, prior to the creation of the U.S. Department of Education. Despite a federal emphasis that funded a massive (by educational standards) research, development, and dissemination effort, career education also failed to have significant impact on the traditional academic curriculum. Some of the barriers that prevented career education from having more impact are the same as those facing STW today. These barriers are discussed in the final section of this paper.

“Some of the barriers that prevented career education from having more impact are the same as those facing STW today.”

The problems that manual training, vocational education, and career education attempted to address remain. In passing the STWOA, Congress set forth 10 findings that constituted the foundation for this legislation. These findings summarize many of the problems that the act is designed to address. Here are the findings, renumbered, slightly reworded, and grouped into three main categories.

With regard to students:

1. A substantial number of youth—especially the economically disadvantaged, racial and ethnic minorities, and the disabled—do not complete high school.

2. About 1 in 10 in the age range 16 to 24, approximately 3.5 million, have not completed high school and are not enrolled in school. These individuals are particularly unprepared for the demands of a 21st century work force.

3. Three-fourth of high school students enter the work force without bachelor's degrees, and many do not possess the academic and entry-level occupational skills needed by business and industry.

With regard to the workplace:

4. The workplace in the United States is changing in response to heightened international competition and new technologies. Such forces are ultimately beneficial to the nation, but they are shrinking the demand for and undermining the earning power of unskilled labor.

5. Although many students in the United States have part-time jobs, there is infrequent linkage between such jobs and career planning or explanation or school-based learning.

6. Unemployment among youth in the United States is intolerably high and earnings of high school graduates have been falling relative to earnings of individuals with more education.

With regard to education and the transition to employment:

7. Students in the United States can achieve high academic and occupational standards, and many learn better and retain more when they learn in context, rather than in the abstract.

8. Work-based learning, which is modeled on the time-honored apprenticeship concept, integrates theoretical instruction with structured on-the-job training. This approach, combined with school-based learning, can be very effective in engaging student interest, enhancing skill acquisition, developing positive work attitudes, and preparing youths for high skill, high-wage careers.

9. The United States lacks a comprehensive and coherent system to help its youth acquire the knowledge, skills, abilities, and information about and access to the labor market necessary to make an effective transition from school to career-oriented work or to further education and training.

10. Federal resources currently fund a series of categorical, work-related education and training programs, many of which serve disadvantaged youth, that are not administered as a coherent whole. (PL 108-239, Sec 2)

The problems the STWOA addresses have proved so persistent because they arise from one of the strongest, most widely held of our national values: that all young people should have the opportunity to become all that they are capable of becoming. Because of this value, we, as a people, are reluctant to employ explicit methods of directing young people toward future occupational roles. We fear that if an occupational direction is set too early in life it may limit access to more attractive options at a later age.

An article in *Techniques*, the journal of the American Vocational Association, addressed the concerns many parents have about STW (Vo 1997). The primary objection is the premature foreclosing of future options. Parents feel their youngsters are too young and uncertain to make career commitments in high school. Some parents feel STW is merely a repackaging of vocational education. There are even those who claim STW is a method to prepare compliant workers for a centrally planned economy (Eagle Forum undated).

“Our national reluctance to require early occupational decisions has many costs.”

Our national reluctance to require early occupational decisions has many costs. One is the several years that a large proportion of high school graduates, and even more dropouts, spend "floundering" (Hamilton 1987) in low-wage jobs that have no career potential. Another is what Grubb (1989) has called "milling around" in post-secondary education without clear occupational goals. Beyond these direct costs to the individuals are the societal costs of providing second-chance training and retraining programs for those who cannot find jobs that offer some degree of security and more than minimum wages. At the macro level, the inefficient preparation of human resources results in a work force that makes it more difficult for U.S. firms to compete in the global economy.

Source Documents

The documents summarized in this section were used to develop the synthesis of the characteristics presented in this paper. Three criteria were used to select these documents. The first is that they were based on reviews or analysis of empirical data that attempted to determine the effectiveness of programs intended to assist the transition from education or training to employment. The effectiveness data were either formative, regarding the conduct of the programs, or summative, regarding outcomes. The second criterion is that the research was based on multiple sites. To keep the review within manageable length, case studies of single sites were not included. The third criterion was that the documents were published after the passage of the STWOA and either were entered into the ERIC database or came to the author's attention[1].

Bragg and Hamm (1995) identify 5 factors found in 10 work-based learning programs in community colleges. These programs "were selected as exemplars of a formal structure and commitment to work-based learning" (p. 43).

Charner et al. (1995) summarize the findings of a National Institute for Work and Learning study of 14 school-to-work transition programs. "The sites represent a variety of goals and strategies, strong connections with business, and evidence of success in terms of student outcomes." (p. 40)

Churchill (1994) draws upon studies evaluating youth employment programs that have demonstrated the shortcomings of programs that concentrate on work experience alone. Churchill focuses his recommendation on how the STWOA model can benefit planners and providers of Job Training Partnership Act programs.

Grubb's (1995) paper is based on a review of studies of the effectiveness of the job training programs for disadvantaged and

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[1] The ERIC database was searched several times using the keywords school-to-work (as one word) and limited to the years 1994-1997. An April 1997 search identified 669 documents. The abstracts of those that appeared to be appropriate were reviewed and full copies were obtained of those that were judged to be most relevant for this paper. Additional searches were conducted with *evaluation* added as a keyword to cross-check the results of the wider searches. In some cases the research that underlies the documents was reported in more than one publication. The sources cited here are those that were judged to be the more accessible. For example, journal articles are cited rather than the technical reports upon which the articles are based.

dislocated workers, welfare recipients, and other special populations. After an analysis of the reasons for the modest benefits from such programs, Grubb, like Churchill, concludes that the elements included in the STWOA are needed to provide a vision for guiding job training programs.

Hamilton and Hamilton (1994) prepared their document as a position paper for the American Youth Policy Forum. The paper reviews the difficulties that young people encounter in finding jobs that use their skills and pay more than the minimum wage. The paper concludes that a career opportunity system is needed for noncollege-bound youths and that the STWOA provides a basis, but not a blueprint, for such a system.

The Office of Technology Assessment (1995) examined the potential opportunities and possible pitfalls of work-based learning that would be supported by the STWOA. Three main questions are addressed: (1) What are the alternative models of work-based learning and how effective are they? (2) What new learning technologies could support work-based learning? and (3) How can employers be persuaded to provide work-based learning experiences for students?

Pauly (1994) draws upon a study conducted by the Manpower Development Research Corporation of 16 innovative programs that link high school with work-based learning. The article discusses what educators and employers accomplished, the barriers they encountered, and advice they would give to those starting STW programs.

The Secretaries of the Department of Education and the Department of Labor, Riley and Reich (1996), report to Congress on the implementation of the STWOA. Strictly speaking, this report is more a descriptive survey of early implementation efforts than an evaluation. It does, however, identify key STW system elements, based on states that were able to submit complete data in 1996. This paper thus represents the best current national description of what is required to develop statewide STW systems.

Characteristics of Successful STW Initiatives

The characteristics in this section represent the author's synthesis of the findings and recommendations from the eight documents listed in the previous section. Naturally, there is not complete agreement across the documents regarding either the content or wording of specific characteristics, principles, and practices of successful STW initiatives. To enable readers to judge for themselves whether the summary statement accurately reflects the sources, quotes from the separate documents follow each of the characteristics. The order is from the general to the specific. The characteristic dealing with overall system development is presented first and is followed by those for partnerships, commitment, and funding, which are followed by those dealing with guidance and classroom/worksite activities.

Characteristic 1:	**Successful initiatives are guided by a comprehensive, strategic vision that sets forth the linkages expected at each level of the system and encourages partners to realize the vision in their particular circumstances.**

As stated in the original documents:

> Charner et al. (1995): Successful transition systems require administrators who, with the support and involvement of their communities, are able to develop a shared vision, clear goals, and a comprehensive strategy. (p. 40)

> Churchill (1994): Short-term, fragmented interventions are insufficient—institutions and resources need to be merged to provide ongoing youth development and support. (not numbered)

> Grubb (1995): The real problem with existing job training program is not that an individual component here or there is not of adequate quality, but that the offerings of the 'system' as a whole consist of a welter of different services, none of them obviously more effective than any others and all of them poorly coordinated. . . . This suggests that the most powerful approaches to reforming job training would first create models of more comprehensive and interactive employment-related services. (p. 92)
>
> Hamilton and Hamilton (1994): Because many components of a career opportunity system already exist, we do not need to build a system from the ground up. *The challenge facing us is to bring existing components together as a coherent whole that serves the needs of all young people*. (emphasis in the original) (p. 4)
>
> Riley and Reich (1996): For STW purposes, states generally are divided into regions that correspond to local labor market areas, JTPA service delivery areas, educational areas, geographic boundaries, or other established divisions. These regions, usually governed by a partnership of key stakeholders, operate as support structures for local partnerships. They provide a vehicle for coordinating local workforce training and economic development initiatives with STW, as well as sharing best practices. (p. 41)

Each of these sources speaks to the need for a comprehensive view of STW. Many programs exist to facilitate transition, but no overall system connects these separate pieces. The legislation itself and all its advocates have repeatedly stated that STW is not another program. STW is directed to systemic change in the way efforts are organized and coordinated so that all students are served.

Organizational change and coordination are, of course, formidable challenges. Most administrators acknowledge the value of coordination but making it happen is not easy. Resources must be invested and disparate policies, regulations, funding sources, service areas, and calendars must be aligned. In addition, coordination carries the threat of loss of control and accountability (Lewis and Chen 1988).

The literature suggests that, if these barriers are to be overcome, potential partners must face a common problem the solution to which exceeds the resources of any single partner (Gray 1985), and

there must be mutual benefit from cooperation (Van de Ven 1976). The STW transitional problems of youth surely exceed the resources of any partner. It remains to be seen whether there will be sufficient coordination to yield mutual benefits.

Creating a strategic vision primarily involves describing a future state where things would be better than they are at present. A vision is an idealized concept of how things ought to be. Obviously, the better the information about current conditions, the clearer the vision of the future can be. For this reason, the process of creating a vision often begins with an assessment of the current situation.

It is beyond the scope of this paper to discuss the procedures for conducting a needs assessment and developing a strategic vision, but these are essential steps that should be part of any STW initiative. Some of the guides listed in the bibliography discuss these processes. The Center for Occupational Research and Development offers, on a fee basis, a standardized procedure for assessing needs and planning educational improvements for tech prep and STW (Bond 1996).

Characteristic 2: **Successful initiatives have made special efforts to involve employers in their partnerships.**

As stated in the original documents:

> Bragg and Hamm (1995): The location of a local work-based learning program relative to its industry is another success factor. We saw it in terms of having a 'corner on the market.' Extremely close ties with local employers contribute to programs that are widely viewed as 'exclusive' training grounds, especially when those industry groups (usually made up of small to medium firms) also are of great importance to the local economy. (p. 43)

> Charner et al. (1995): Effective collaboration requires all stakeholders—schools, businesses, postsecondary institutions, and community partners—to be engaged in an active and ongoing partnership and to be willing to reform all aspects of the system. (p. 58)

Hamilton and Hamilton (1994): *Partnership* (emphasis in the original) is the key to constructing a system out of the already existing programs and new components. The most challenging new component is systematic work-based learning, epitomized by youth apprenticeship. Securing opportunities for large numbers of young people to engage in work-based learning entails multiple new connections among existing institutions and a solid institutional foundation. The following entities must be involved:

- Employers (individual employers, industry or trade associations)
- Schools (school systems, area vocational centers, community, technical, and vocational colleges)
- Employees (union, professional organizations, representatives of employees without formal organizations)
- Young people
- Parents
- Community organizations (school/business partnerships, neighborhood organizations, affinity groups, Cooperative Extension)
- Government (federal, state, and regional Departments of Education, Labor Economic Development, and related agencies) (p. 6)

Office of Technology Assessment (1995): Successful implementation will require effective partnerships between business and schools—institutions that operate with different cultures and have little experience working together. (p. 19)

Pauly (1994): A major challenge will be to recruit large numbers of employers to provide more than just a small number of intensive work-based learning slots for students. (p. 16)

Riley and Reich (1996): Employers and labor unions play a key role in building a STW system. This element relates directly to several charges in the [STWOA] Act: first, the emphasis on employers and unions as equal partners with education in the full range of local implementation activities; second, the charge to transform workplaces into active learning environments; and third, enabling all systems to offer work-based learning to all students. This translates into a need for substantive investment and leadership by employers at the state, regional, and local level. (p. 37)

The challenges of preparing youth for meaningful employment cannot be met by educators alone. All segments of the community must become involved, but the participation of employers is critical. Every serious examination of STW concludes that the major obstacle to making it an option for all students will be securing the cooperation of enough employers who are willing to provide opportunities for work-based learning (e.g., Bailey 1995). Germany is often cited as the prime example of a major industrialized country that has secured the full involvement of employers and unions in the preparation of youth for work. Stern (1991) cautions that the chances of creating comparable conditions in this country are slim:

> The elaborate set of institutions, laws and social norms that evolved over the course of centuries and now sustain the German apprenticeship system do not exist in the United States and could not be created by fiat. In the absence of institutions to promote their collective self-interest in a well-trained workforce, most individual employers try to minimize their own investment in training and rely on schools or other firms to train their new employees. (cited in Mendel 1994, p. 10)

The Office of Technology Assessment (1995) has identified the main incentives and disincentives to employer involvement. The opportunity to recruit well-trained workers and contributing to the improvement of education and the community are perceived as the main benefits. The disincentives include the following:

- Inadequate preparation of students for work placements
- Lack of coordinated support from the work-based learning program
- The employers' training costs, which include student wages and the time and effort of supervisors and mentors
- Regulatory restrictions and the extra insurance costs, which include child labor and safety laws and general liability and worker's compensation insurance
- Organizational resistance to work-based learning from management or other employees in the company
- Economic uncertainty, due to slowdown in the local economy or changes in a company's business fortunes (p. 17)

Of these six, only the first two can be influenced by educators.

If STW is to reach its full potential, employers, more than any other partners, must see that participation is in their own self-interest. For the private sector firms that employ over 85 percent of the work force, self-interest means that STW must, in the long run, contribute to their profitability. If employers cannot be convinced of this benefit, it is unlikely they will participate.

Characteristic 3:	**Commitment and support at all levels and from all partners are essential for STW initiatives. It is helpful to have individuals or groups who act as advocates for STW.**

As stated in the original documents:

> Bragg and Hamm (1995): An individual or small group was critical to the success and reputation of each program. The leaders were deeply knowledgeable, experienced and committed. Often they were thought of as 'champions' for their programs, and in many cases, were founders continuing on as torchbearers.
>
> Strong programs maintain healthy relationships within the college and are well supported by upper administration. (p. 43)
>
> Charner et al. (1995): Those who deliver the program—teachers, counselors, and support staff members—must be innovative, adaptable, and willing to take risks with instruction, curriculum, and classroom management. They must be committed to helping each student navigate new learning systems and strategies, and they must often fill such diverse roles, as tutor, mentor, friend, role model, and taskmaster. (p. 58)
>
> Office of Technology Assessment (1995): Parents and students will need to be convinced of the merits of these new [STW] arrangements, and many may respond initially with skepticism. (p. 9)

> Pauly (1995): Program directors and teachers told us repeatedly about the importance of high-quality program implementation. Some frequently cited lessons include—
>
> - A school-level program coordinator with release time is needed to monitor and energize each school's implementation process.
> - School-wide support is critical. Guidance counselors, nonparticipating teachers, and administrators can make or break a program's reputation, so program staff should work hard to gain their support. (p. 69)
>
> Riley and Reich (1996): If STW is to be effective for all students, implementing partners need training and staff development. For education staff, this might include opportunities for teachers and career counselors to have extended experience with employers. Staff development also might promote a shared base of knowledge among elementary, secondary, and postsecondary staff in areas such as contextual learning, portfolio assessment and use of technology. . . . Employers and labor unions could learn how they can best contribute to all education reform efforts, from developing work-based and school-based component, mentoring curricula, and skill standards, to participating in employer/educator teaching teams, and helping restructure schools as high performance organizations. (pp. 34-35)

Much confusion and misunderstanding exist about the purposes of STW. Some of these misconceptions undoubtedly arise from the term itself. School is often understood to mean *high school*, and the inference is made that students will move directly to work without additional education. Some perceive STW as just another version of vocational education, appropriate primarily for students who do not plan to continue their education.

The advocates of STW and the legislation authorizing the current federal initiative specifically disavow such a limited view. Nevertheless, it exists; continuing, extensive efforts will be necessary to change prevailing perceptions. These efforts must be addressed to educators as well as to parents and students.

Characteristic 4:	**STW initiative have adequate financial support, which often means a variety of different sources have been developed.**

As stated in the original documents:

> Bragg and Hamm (1995): Sufficient and stable financial resources, from more than one source, are important to supporting all aspects of the program. Nearly all the exemplary programs had funding from outside their colleges, especially from the firms engaged in the programs. Work-based learning is also extremely demanding of human resources. All the people engaged in it need time, training, and support to contribute fully. (pp. 43-44)
>
> Charner and others (1995): Without creative financing strategies, no high-quality school-to-work transition program can survive. The special requirements of putting together a comprehensive system make it necessary to identify and reallocate financial and in-kind resources from diverse federal, state, and local government agencies; school districts; business; community-based organizations, and foundations. (p. 59)
>
> Grubb (1995): This vision of job training programs would combine the resources currently available in different federal programs to create more integrated efforts. These would combine, for example, remediation currently funded by the Adult Education Act, the Adult Literacy Act, JTPA, and JOBS [Job Opportunities and Basic Skills]; vocational skills training supported by Perkins, JTPA, and (sometimes) JOBS; on-the-job training and work-based experience now funded by JOBS, and potentially the STWOA; support services funded by JTPA and JOBS, and income maintenance available to welfare recipients in JOBS and to students through Pell Grants. (p. 94)
>
> Office of Technology Assessment (1995): High quality work-based learning opportunities will require the investment of considerable time and resources by participating employers. (p. 9)

The systemic change called for by the STWOA will be expensive, and the federal grants available under this act will cover only a small percentage of the cost. The grants are intended to be "venture capital" (Riley and Reich 1996, p. 15) that will be used to involve in the transition process a variety of partners who have had limited contact with education. The expectation is that once the partnerships are formed, nonfederal sources will assume the cost of maintaining them. The largest contribution will have to come from employers, and has been noted earlier, they will have to perceive benefits from incurring the costs of their participation in STW.

Characteristic 5: **Students have a strong foundation of career information and an awareness of their own interests, goals, and abilities that result from a planned sequence of learning experiences throughout their school years.**

As stated in the original documents:

> Charner et al. (1995): Another critical component for effective transition systems is the presence of a set of core support services that are geared to each individual student. Some of these services begin as early as elementary school and include career information, assessment, and career counseling, as well as mentoring and personal counseling. . . . Guidance and information services must be ongoing, and every student should have an educational and career plan that is regularly reviewed and updated.
>
> Programs that do not start until the 11th grade miss the chance to make a difference for many students. Programs need to take a progressive approach that includes preparatory 'feeder' programs starting as early as elementary or middle school. (p. 59)
>
> Churchill (1994): Adolescents have particular developmental needs—preparation for the worksite, adult mentorship, and ongoing support and counseling are vital. (not numbered)

Hamilton and Hamilton (1994): Before they can make sound choices about their education, young people need a sense of where it can lead them. Everyone needs to become familiar with possibilities, even long before specific career choices are necessary. . . . Career information should be—

- Broad and varied enough to include the entire range of career pathways
- Age appropriate
- Started in elementary school and continued through higher education
- Based on observation and experience as well as information
- Organized to include parents. (p. 5)

Pauly (1994): For students to make informed decisions about the kind of work-based learning experiences that are appropriate for them–and to avoid making a premature occupational choice–they need information on the opportunities and requirements of jobs in many different industries. Some programs provide highly developed career exposure activities and counseling. (p. 69)

Riley and Reich (1996): In STW systems, career awareness and exploration begin as early as possible, with students choosing a career major by the start of 11th grade. Career awareness and exposure activities, and selecting a major allow students to choose a context in which to learn and apply their skills in practical situation. Together with connecting activities, this provides learners with the information, tools, and support to make informed choices about their academic and career goals. (p. 33)

STW systems allow students to explore 'all aspects of an industry' . . . students receive broad exposure to issues and skills related to their career of interest, rather than learning isolated task- or job-specific skills. First, for students, it means that work-based and school-based learning components provide exposure to each component of an industry—from sales and marketing, management and finance, to technical skills, labor and community issues, health and safety, even environmental issues—in an integrated instructional system. For implementing partnerships, 'all aspects' means that students are presented with

> information on the array of occupations and careers that comprise an industry, from the most basic to the most advanced. (pp. 35-36)

Most school systems already have in place at the elementary and middle school levels many of the components needed to implement this characteristic. The most lasting effects of the career education initiatives of the 1970s appear to have been at these levels. Attempts to include information about careers as part of instruction in the traditional curriculum were better received at the elementary than at the secondary level. In middle schools, the exploratory courses, such as industrial technology, focused more directly on careers and many schools began structured work-based exploration experiences that have continued to the present (Wickwire 1995).

For STW to realize its potential, existing components need to be strengthened and a new relationship created between education and work in grades 9-12, especially in the final 2 years. Forging such linkages will require change throughout the high school curriculum in the manner indicated in the next characteris[illegible].

Characteristic 6: Academic learning is integrated with and supportive of occupational learning.

As stated in the original documents:

> Charner et al. (1995): The curriculum in transition systems must provide multiple points of connection between the traditional worlds of work and learning. Classes must work to integrate academic and vocational courses and to provide hands-on and contextual learning experiences that place high expectation on students. Programs must build a solid foundation of both academic skills and work-readiness skills. (p. 58)
>
> Churchill (1994): 1. Work alone is not enough—workplace experiences should be integrated with academic preparation to yield necessary practical and theoretical skills.

2. Narrow job-training is not enough—because the world of work is changing rapidly, work-based experiences should build broad, transferable skills.

5. Just putting people in work settings does not ensure [high] quality learning—management of work-base experiences is a complex task, requiring clear goals and expectations, structured training plans, carefully designed administrative capacity, and quality assurance mechanisms. (not numbered)

Grubb (1995): 1. The inclusion of academic instruction. In many federal programs like JTPA and JOBS, these academic components are either remedial education or English as a Second Language (ESL).

2. The inclusion of vocational skills training, integrated with academic (or remedial) instruction. Integration does not imply (as it does in job training) that individuals receive both kinds of instruction, at different times of day; it is a much more complex practice in which academic and occupational content are combined within a single class, sometimes with the collaboration of two different instructors. (p. 93)

Hamilton and Hamilton (1994): A system requires multiple effective links between the two learning setting, including the following:

- School credit granted for work-based learning.
- School courses teach knowledge and skills used at work.
- School courses and projects draw on work experiences and work issues.
- Parents are knowledgeable about both school and work.
- Case management provides support and problem solving across both settings and involves parents.
- School coordinators and workplace coordinators communicate frequently.
- Reports on work-based learning are shared regularly with school and parents.
- Students receive advice and encouragement (mentoring) at work and school on course selection and performance and on career planning. (p. 6)

> Riley and Reich (1996): Learning is organized around career majors, which provide a context for learning tied to students' interests and allow for connections between school-based learning and work-based learning. (p. 39)

The degree of interconnectedness between school-based and work-based learning called for in these recommendations has never been achieved on a broad scale in U.S. education. It is, in effect, a call for all teachers to revise radically what they teach. At present, in the typical classroom, the textbook provides the primary structure for the subject matter. Teachers vary in the degree to which they go beyond the text, but the broad definition of the content to be covered is provided by the textbook.

The rationale for STW calls for teachers to adopt a completely different perspective. With STW, what is to be taught starts with the skills and knowledge required in the workplace. Instruction in the traditional academic subjects—English, mathematics, science, social studies—is to be made relevant to what is needed on the job. STW thus calls for teachers, especially those at the high school level, to change how they define their curriculum and present their material. This is a change easily recommended, but tremendously difficult to implement. The magnitude of the challenge can scarcely be overestimated, but if STW is to be implemented in the manner envisioned by its advocates, this challenge must be met.

“STW thus calls for teachers, especially those at the high school level, to change how they define their curriculum and present their material.”

Other Characteristics

The characteristics that have been discussed are the ones on which the most consensus exists across the separate sources. This section discusses other recommendations that were presented by only one of the sources.

Charner et al. (1995) offer two additional key elements of successful program:

- Fostering self-determination in all students
- Ensuring access to postsecondary options

The first of these addresses the need for all students to take responsibility for their learning and the development of personal and social skills that will enable them to be mature, independent adults. The operative word in the previous sentence is *all*, and it is emphasized in the original document. STW cannot be for special

groups. If it is, it runs the risks of either being stigmatized or elitist. The emphasis on postsecondary options is consistent with the need for STW to be for all students. If STW is seen as most suitable for students not planning on college, it obviously will have limited appeal.

Pauly (1994) identifies two very specific elements of successful implementation:

- If STW courses are offered as electives, many students will take only a few of these courses, limiting the benefits they receive.
- Scheduling is a common problem that often requires intervention from the principal. (p. 69)

It should be recalled that Pauly, and most of the other authors, reports the results of research on discrete programs, not initiatives that are attempting systemic change to serve all students. Nevertheless, the second of what Pauly calls "frequently cited lessons" indicates that the creation of comprehensive options is needed if STW is to be successful. This lesson has all the more meaning as STW attempts to become more inclusive and have its principles adopted across the full curriculum. Career majors and career academies, as described by Hamilton and Hamilton (1994), also address the need for a comprehensive approach and flexible scheduling:

> Career majors and career academies enable students to organize their education around a career area, giving them an increased sense of purpose and clearer target to aim for. Career academies also provide a greater sense of belonging and more flexible schedules than conventional schools offer. (p. 6)

If STW were to be implemented as its advocates hope, all students would have career majors and the school schedules would be developed to accommodate the combination of school-based and work-based learning. The major barriers to such sweeping changes are discussed in the next section.

Barriers to Implementation

The documents that were reviewed to develop this paper indicate that the transition from education to employment can be facilitated by well-designed programs. The full implementation of the STWOA requires that the principles of these programs be applied more widely to create systems for all students. The major barriers to such implementation are similar to those that blocked widespread adoption of career education. In 1974, 20 years prior to the passage of the STWOA, the Education Amendments of 1974 officially established career education as a national priority and set forth the following objectives (Herr 1987, p. 20):

- Increase the relationship between schools and society as a whole
- Relate the curricula of schools to the needs of persons to function in society
- Extend the concept of the education process into the areas of employment and community
- Foster flexibility in attitudes, skills, and knowledge in order to enable persons to cope with accelerating change and obsolescence
- Eliminate any distinction between education for vocational purposes and general or academic education

The parallels between these objectives and those of the STWOA are obvious. The passage of STWOA is evidence that the objectives of career education were not achieved.

The barriers that blocked career education remain, and they must be dealt with if the potential of the STWOA is to be realized. Major efforts will be needed in these areas:

- Recruiting enough employers who are willing to provide opportunities for work-based learning
- Providing teachers the time, resources, and support (especially the assistance of employers) required to connect school-based and work-based learning
- Informing parents about the objectives of STW and countering erroneous perceptions and assumptions
- Fostering the vocational maturity of high school students

The first and main barrier has been discussed in connection with Characteristic 2. STW is totally dependent on employers becoming full partners in the preparation of young people for careers. The successful programs have demonstrated that high levels of employer involvement are possible. The challenge is to convince a sufficient number of employers to provide STW opportunities for all students.

More internal to education, but almost as difficult, is the effort that will be required to change the high school curriculum in the manner envisaged by STW. Academic teachers will have to become sufficiently familiar with a variety of occupations to design related instruction. Individual educational plans will have to be developed for each student. Employers will have to devote long hours to planning and coordinating instruction with teachers. All of these things, which are happening on a small scale, will have to be greatly expanded.

"

Parents may not be essential to the development of STW initiatives, but they are crucial to their viability.

"

None of the documents that were reviewed to identify the characteristics presented in this paper stressed the role of parents in STW. Parents may not be essential to the development of STW initiatives, but they are crucial to their viability. The value our culture places on college education has been discussed many times (e.g., Gray 1996, 1997). Most educators and many parents know the many arguments that can be made against the time and expense of a college education. Still the preference remains. STW is intended to maintain, not close, postsecondary options, but parents are not seeing it that way (Vo 1997). A massive shift in public perception will be necessary for parents of college-bound students to support STW for their children.

Characteristic 5 emphasizes the need for a strong foundation of career information developed through a planned sequence of learning experiences. Research on occupational decision-making has established that choices are not single, point-in-time events, but part of a developmental process. The theorists who have proposed different models of career choice all agree that young people need a period of exploration before their interests crystallize on a limited number of acceptable alternatives (Osipow 1983).

The German dual system of apprenticeship is widely regarded as the best existing model for facilitating the transition from school to employment. Even in Germany, however, longitudinal studies have found that only about 50-60 percent of adults hold jobs related to their prior training (Witte and Kalleberg 1994). Opportunities for occupational exploration in middle school and the

initial high school years will have to be significantly expanded to enable students to develop the maturity and acquire the information needed for informed choices.

Despite the major obstacles facing STW, it responds to real needs in our society and has received strong, continuing attention from high political officials. More so than career education, STW is designed to be a ground-up rather than top-down innovation. Nevertheless, the paradox mentioned in the introduction could still be the greatest threat to STW achieving its potential. An investment much greater than that currently being made will be required from all partners if the structural changes called for by the act are to be realized. If this investment is forthcoming, if sound principles are followed, and if the systems are given adequate time to develop, STW can have a major impact on education and the productivity of the U.S. work force.

“An investment much greater than that currently being made will be required from all partners if the structural changes called for by the act are to be realized.”

To underscore the need for time for STW systems to develop, the paper closes with one of the basic findings from the analysis of the assumption underlying the STWOA conducted by the Office of Technology Assessment (1995):

> Even the best school-to-work transition programs have required at least five years of implementation and refinement to operate effectively. Neither theory, nor research, nor expert advice appears sufficient to assure quick success, perhaps because success is partly dependent on establishing a reputation with employers, parents, and students, and that takes time. (p. 9)

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Many of the documents reviewed for this paper were not used to develop the characteristics. Some merely repeat the need for the basic principles of STW, namely, that it is intended for all students and includes school-based learning, work-based learning, and connecting activities. It is assumed that these principles would be part of any STW initiative, and they are not included among the characteristics listed here.

Also excluded were documents that summarize current thinking with regard to STW. Of necessity, these documents often go beyond what has been empirically verified. The prime example of such documents is the template for a STW system development that was issued by the National School-to-Work Office. This template lists all the elements judged to be essential for system development and maintenance. In so doing, it includes or implies all of the characteristics discussed in this paper. Other good examples of this type are ***Connecting Learning and Work, A Call to Action*** published by the Education Commission of the States (1996) and ***Successful Strategies: Building a School-to-Careers System***, published by the American Vocational Association (Thiers 1995). The bibliography includes these documents under the category "General Guides for Implementing School-to-Work."

The most comprehensive review of research on school-to-work programs that was conducted prior to the passage of the STWOA is presented by Stern and et al. (1994). This paper raises strategic choices that must be addressed in developing STW initiatives, but provides no specific guidance for implementation. Consequently, it was not used as one of the source documents.

The final types of documents that were considered but not included are handbooks and manuals that address specific components of STW such as guidance and counseling, cooperative education, or youth apprenticeships. These publications can be very useful to those responsible for specific components. They typically suggest tasks to be accomplished and include sample forms that can be used. Such documents are also included in the bibliography grouped by the components they address.

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